

1 WHAT IS CLAIMED IS:

- 2
- 3 1. A homogeneous, amorphous catalyst support comprising a  
4 modifying-metal-oxide and a base-metal oxide, in which the  
5 modifying-metal-oxide is homogeneously distributed throughout the  
6 base-metal oxide, the catalyst support having a Surface to Bulk  
7 modifying-metal /base-metal atomic ratio of from about 0.6 to about 1.3  
8 and exhibiting an X-ray diffraction having broader line width and lower  
9 intensity than is exhibited by the base-metal oxide.
- 10
- 11 2. A catalyst support according to claim 1, wherein the  
12 modifying-metal-oxide is selected from the group consisting of silica,  
13 titania, zirconia, magnesia and mixtures thereof.
- 14
- 15 3. A catalyst support according to claim 1, wherein the base-metal-oxide  
16 is selected from the group consisting of alumina, silica, titania and  
17 mixtures thereof.
- 18
- 19 4. A catalyst support according to claim 3, wherein the  
20 modifying-metal-oxide is selected from the group consisting of silica,  
21 titania, zirconia, magnesia and mixtures thereof.
- 22
- 23 5. A catalyst support according to claim 4, wherein the base-metal oxide  
24 is alumina and the modifying-metal-oxide is silica.
- 25
- 26 6. A catalyst support according to claim 5, wherein the catalyst support  
27 comprises from about 70 wt% to about 99.75 wt% alumina.
- 28
- 29 7. A catalyst support according to claim 5, wherein the catalyst support  
30 comprises from about 90 wt% to about 99 wt% alumina.
- 31
- 32 8. A catalyst support according to claim 5, which has been prepared by a  
33 cogel process.

- 1 9. A homogeneous, amorphous silica-modified-alumina catalyst support  
2 having a Surface to Bulk Si/Al ratio of from about 0.6 to about 1.3 and  
3 exhibiting an X-ray diffraction having broader line width and lower  
4 intensity than is exhibited by unmodified alumina.  
5
- 6 10. A catalyst support according to claim 9, wherein the Surface to Bulk  
7 Si/Al ratio is from about 0.8 to about 1.2.  
8
- 9 11. A catalyst support according to claim 9, wherein the Surface to Bulk  
10 Si/Al ratio is from about 0.9 to about 1.1.  
11
- 12 12. A catalyst support according to claim 9, wherein the Surface to Bulk  
13 Si/Al ratio is from about 1.0.  
14
- 15 13. A catalyst support according to claim 9, wherein the catalyst support  
16 comprises from about 70 wt% to about 99.75 wt% alumina.  
17
- 18 14. A homogeneous, amorphous silica-modified-alumina catalyst support  
19 exhibiting an X-ray diffraction having a broader linewidth and lower  
20 intensity than is exhibited by unmodified alumina.  
21
- 22 15. A catalyst support according to claim 14, wherein the full linewidth is  
23 50% greater than the linewidth of unmodified alumina when measured  
24 at half height.  
25
- 26 16. A catalyst support according to claim 14, wherein the intensity is at  
27 least 25% lower than for the unmodified alumina.  
28
- 29 17. A catalyst for the Fischer-Tropsch process comprising a homogeneous,  
30 amorphous catalyst support comprising a modifying- metal-oxide and a  
31 base-metal oxide, in which the modifying-metal-oxide is  
32 homogeneously distributed throughout the base-metal oxide, the  
33 catalyst support having a Surface to Bulk modifying-metal /base-metal

- 1 atomic ratio of from about 0.6 to about 1.3 and exhibiting an X-ray  
2 diffraction having broader line width and lower intensity than is  
3 exhibited by the base-metal oxide and a catalytically active Group VIII  
4 metal.  
5
- 6 18. A catalyst according to claim 17, further comprising at least one  
7 promoter.  
8
- 9 19. A catalyst according to claim 17, wherein the modifying-metal-oxide is  
10 selected from the group consisting of silica, titania, zirconia, magnesia  
11 and mixtures thereof, the base-metal-oxide is selected from the group  
12 consisting of alumina, silica, titania and mixtures thereof.  
13
- 14 20. A catalyst according to claim 19, wherein the catalytically active  
15 Group VIII metal is selected from the group consisting of cobalt, iron  
16 and mixtures thereof.